

THE PURDUE LANDSCAPE REPORT

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April Ends Warm and Wet

(Austin Pearson, pearsona@purdue.edu)

It's gonna be... I mean... it's already May! How can this be? Early spring flowers have already cycled through, I'm on record pace for mowing my yard, and field activity has been delayed due to a wet April. April began a bit cool with several mornings having frost advisories and freeze warnings, which was not too out of normal. This cold snap came after a warmer winter and early bud break for many perennial crop producers. We've heard reports from north of I-70 that there may not be a peach crop this year. If you experienced frost or freeze damage to your perennial crops, we'd like to hear from you. Kindly drop us an email (in-sco@purdue.edu) so we can document these losses.

After this cooler start, temperatures rebounded. The Indianapolis International Airport recorded the first 80F temperature for 2024 on April 14. The maximum daily temperature surpassed 80F four times this month, which was more than double the 1931-2024 average (1.8 days). April 1977 had the most days (9) with daily maximum temperatures at or above 80F. Despite the cooler start, the preliminary average temperature for April 2024 was 55.1F, which was 3.7F above normal. Average temperature departures ranged from 2.0F above normal in central Indiana to 4.0F above normal in other areas (Figure 1). As a result of the warmer temperatures, [Growing Degree Days](#) ran above normal throughout much of the state (Figure 2).

April was wet. Precipitation totals ranged from 5 to nearly 10 inches across Indiana or 100 to 300 percent of normal (Figure 3). The Indianapolis International Airport had at least a trace of precipitation recorded 19 days throughout the month. This allowed for limited opportunities to get much done outside. Vincennes 4E, located in Knox County, measured 9.6 inches in April, which was 4.71 inches above normal. As a result of the continued wet conditions, the May 2 release of the [US Drought Monitor](#) was free of drought for the second week in a row!

The national [Climate Prediction Center](#) temperature outlooks favor above-normal temperatures throughout May. Along with this are elevated chances for above-normal precipitation. Not the most conducive to field activity, especially as soils are still trying to dry out. Forecasted precipitation totals exceed an inch statewide, with southern Indiana possibly seeing up to two inches by May 9.

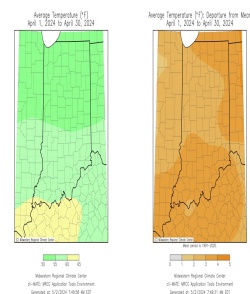


Figure 1: Left - Indiana average temperatures for April 2024. Right - Indiana average temperatures represented as the departure from the 1991-2020 climatological average.

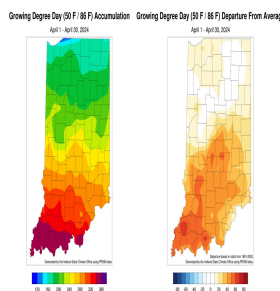


Figure 2: Left - Indiana Growing Degree Day accumulations for April 2024. Right - Indiana's April 2024 Growing Degree Days represented as the departure from the 1991-2020 climatological average.

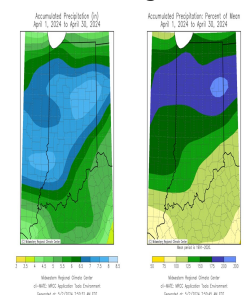


Figure 3: Left - Indiana precipitation totals for April 2024. Right - Indiana's April 2024 precipitation totals represented as the percent of the 1991-2020 climatological average.

A Triple Threat to Rocky Mountain Juniper: Cytospora, Diplodia and Botryosphaeria

(Tom Creswell, creswell@purdue.edu)

Rocky Mountain juniper, *Juniperus scopulorum*, has gained some popularity in Midwest landscapes due to cold and drought tolerance, and to the availability of several upright columnar varieties with attractive blue color, including 'Skyrocket' and 'Wichita Blue'. Like many other junipers, *J. scopulorum* may suffer dieback of small branches and twigs caused by the fungal pathogens *Phomopsis* and *Kabatina*. For a full discussion of those problems see the PLR article from 2017:

<https://www.purduelandscape.org/article/tip-blight-of-juniper/>

The more serious threat to this plant comes from fungal canker and dieback pathogens, including *Cytospora*, *Diplodia* and *Botryosphaeria*. All three are common on many woody plants, but Rocky Mountain juniper appears to be especially susceptible. Large branches often die when infected by these pathogens, and as a result the shrubs become so disfigured they are eventually removed.

Like Colorado blue spruce, Rocky Mountain juniper is better adapted to dry climates in the western states. In humid regions with more frequent rain these dry climate-adapted plants face increased incidence of fungal infections. However, even in the Great Plains region junipers are reported to be frequently damaged by *Botryosphaeria* and another fungal canker pathogen: *Seiridium*.

(https://www.fs.usda.gov/nac/assets/documents/research/publications/rmrs_gtr335.pdf).

Diplodia and *Botryosphaeria* are closely related fungi, produce similar symptoms and are managed in the same way. Both fungi are common in the environment and are spread by wind and water.



Fig. 1. Diplodia canker and dieback on Juniper.

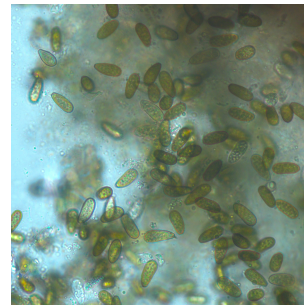


Fig 2. Diplodia spores



Fig. 3. Dieback of Juniper caused by Cytospora canker.



Fig 4. Spores of Cytospora sp. being released from fruiting body. Photo: M. Dowling, Clemson University, Bugwood.org

Cytospora is less commonly found on Rocky Mountain juniper but can cause loss of major branches. It is often associated with various stress factors, including drought stress and wounding.

There is no 'cure' to transform this disease-prone shrub into a fully healthy plant but there are some things you can do to slow down the problem and make them look better.

- Prune out dead wood a few inches below any dead tissue but avoid unnecessary wounding otherwise.
- Clean pruning tools between cuts, by wiping with a disinfectant wipe or spraying with an alcohol solution.
- Once established, juniper is tolerant of dry weather but tends to be more susceptible to dieback if under stress. Plants may require some irrigation during extended drought but take care to avoid using a sprinkler. Instead, water only on the ground to avoid wetting foliage.
- Juniper generally needs little or no fertilizer, and if plants are fertilized, use a lower amount than typically recommended to avoid rapid growth, which might increase susceptibility. Slow and steady growth is more resilient than rapid growth.
- Fungicides are not generally effective in preventing spread of these diseases in the landscape.
- Plant in well-drained locations in full sun.

Invasive Bradford/Callery Pear: Why it is so detrimental and what to plant instead.

(Ben McCallister, bmccalli@purdue.edu)

Most people these days have, at the very least, heard of Callery and Bradford pear trees and know something about the invasiveness of this ornamental street tree. But I still get questions about what it is and why it's so bad. So, I'd like to offer a little history of this infamous tree. Where did it come from, why it's been so popular and such an awful tree to plant, and some suggestions for better species to plant in its place.

Pyrus calleryana, the Callery pear (Fig. 1), was originally introduced from Asia to the United States in 1908. This was done in an attempt to breed pear trees that were resistant to fire blight, a bacterial disease that can spread rapidly causing leaves and branches to blacken as if burnt by fire, eventually resulting in death. Along with its resistance, the Callery pear was tested as a rootstock for the edible European pear (*Pyrus communis*) and its vigor in growth.

Callery Pear grows to a height of 30 to 50 feet with a spread up to 30 feet wide. Thick leaves grow alternately, are dark green, grow with sharp spurs along branches, and turn reddish-purple in the fall. They are one of the first trees to bloom and begin to grow in the spring and one of the last to drop their leaves in the fall. They produce a beautiful show of white flowers in the spring that have an unfortunate odor and an abundance of small fruits in the fall that are spread by birds and other wildlife. In fact, invasive European Starlings are one of the primary species that feed on and spread the fruits and seeds. Stems are smooth with light-colored lenticels while more mature stems are light to medium grey with fissures along the bark. Branching is usually upright in structure leading to poor branch unions that are weak and prone to failure. They grow quickly and tolerate a wide variety of planting locations and conditions, which led to the widespread use as both street and ornamental trees in urban plantings.

The Bradford pear tree is a variety of Callery pear cultivated in the early 1950s as a sterile tree without sharp spurs. Unfortunately, it cross-pollinated with other varieties leading to the rapid spread and out-competing of native species that we see in fields, along roadsides, and in forests today (Figs. 2 & 3). As awareness of the environmental issues of Callery pear spreads, local and state governments are working on removing them from

the landscape. It is often joked that pruning these trees is extremely simple, involving a single cut at the base of the tree.

Due to the extensive use of these trees over the past 7 decades though, removals can lead to a large loss of existing canopy, especially with mature trees. This loss is worth negating the ecological damage they cause and with patience can be replaced with more appropriate species. Suggestions include serviceberry (*Amelanchier laevis*), flowering dogwood (*Cornus florida*), redbud (*Cercis canadensis*), and crabapple (*Malus sylvestris*).

For more information on invasive pear trees or on how to remove them see the links below or contact me at bmccalli@purdue.edu

<https://www.purdue.edu/fnr/extension/id-that-tree-invasive-callery-pear/>

<https://arboretum.harvard.edu/stories/the-rise-and-fall-of-the-ornamental-callery-pear-tree/>



Figure 1: Bradford pear trees as street trees



Figure 2: Bradford/Callery pear trees spreading into wooded lot

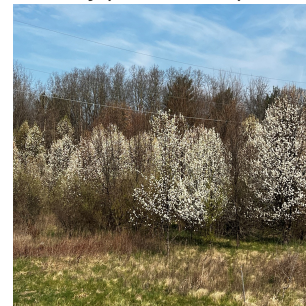


Figure 3. Callery pear growing in naturalized area.

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